

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No.: 09/739,642
Attorney Docket No.: Q62426

REMARKS

Claims 1-5, 7-15, 17 and 19-27 are all the claims pending in the application.

Claims 2-5, 12-15, 17, 26 and 27 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tsunashima et al (US 4,410,582) and further in view of Osborn et al.

Applicants respectfully traverse the rejection for at least the following reasons.

The present invention is directed, as recited in Claim 2, to a thermoformed article comprising a crystalline olefin resin, which article has a surface roughness (Ra) of not more than $2\text{ }\mu\text{m}$, a total haze of not more than 4% and an inner haze of not more than 3% and, as recited in Claim 12, to a laminated molded article which comprises (i) a substrate containing a crystalline olefin resin.

In contrast, as pointed out by the Examiner, Tsunashima et al. discloses a three-layered laminated film comprising a center layer of crystalline polyolefin (Abstract). Tsunashima discloses that the surface layer may have a surface roughness below $3\text{ }\mu\text{m}$ (col. 7, lines 27-31). As described in col. 4, the last paragraph and in the working examples, the film of Tsunashima is produced by coextrusion.

The Examiner conceded that the films of Tsunashima are not molded. The Examiner stated:

The films of Tsunashima are not molded. However, the courts have held that a making of a product does not patentably

distinguish a product from the prior art unless it can be shown that the method of making the product inherently results in a materially different product. In the present application, the Examiner takes the position that the film of Tsunashima reads on the claimed invention because it comprises the same layers with the same compositions as the claimed laminate.”

See page 3 of the Office Action.

Applicants respectfully disagree. The production of thermoformed articles requires the following physical operations:

- (1) heating an un-thermoformed article (e.g. an extruded film) to soften it,
- (2) shaping the softened article when it is still soft, and
- (3) cooling the shaped article to solidify it.

Through these physical operations, an article before thermoforming and an article after thermoforming are different in physical states.

Practically, as proved by the working examples and comparative examples disclosed in the present application, physical properties of extruded films change when the films are thermoformed. The surface roughness may also change. For the Examiner’s convenience, Applicants summarize the data extracted from the specification in the following table:

	Total haze (%)	Inner haze (%)	Surface roughness (μm)
(Before thermoforming)	3.2	2.5	0.03
Example 1	3.4	1.6	0.03
Example 2	3.4	1.7	0.03
Example 3	3.4	1.5	0.04
Example 4	3.6	1.7	0.04
Example 5	3.7	1.9	0.04
Comp. Example 1	7.0	1.7	3.4
Comp. Example 2	11.7	1.2	7.3
Comp. Example 3	12.3	2.1	9.2
Comp. Example 4	20.1	2.1	18.3
Comp. Example 5	30.2	3.2	28.3

An extruded film such as that taught by Tsunashima differs from a thermoformed article obtained by thermoforming the extruded film in structure. Consequently, an extruded film and a thermoformed article are materially distinguishable from each other.

In addition, the surface roughness of a conventional mold changes significantly during the thermoforming as in Comparative Examples 1 to 5. Applicants wish to point out that in Examples 1 to 5, the surface roughness before thermoforming is equal or similar to that after thermoforming because in these Examples an inventive thermoforming mold having an extremely smooth surface was used.

Tsunashima refers to an extruded film having a surface roughness below 3 μm . However, Tsunashima does not refer to a molded article having a surface roughness of not more than 2 μm obtained by thermoforming an extruded film having a surface roughness below 3 μm . Applicants respectfully submit again that a thermoformed article should be materially distinguished from a corresponding extruded film before thermoforming.

Further, Tsunashima teaches that an extruded three-layered film having a surface roughness below 3 μm has merits on drawability. However, in general, a thermoformed article is not further drawn. Therefore, even although Tsunashima teaches making an extruded film have a surface roughness below 3 μm , Tsunashima does not disclose or fairly suggest any benefits resulting from making a thermoformed article have a surface roughness not more than 2 μm .

Moreover, Tsunashima does not teach or suggest how to prepare a thermoformed article having a surface roughness of not more than 2 μm .

In view of the above, Applicants respectfully submit that one of ordinary skill in the art would not have been motivated to make a thermoformed article have a surface roughness of not more than 2 μm in light of the disclosure of Tsunashima.

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Still further, any *prima facie* case of obviousness would have been overcome by the unexpectedly superior results of the present invention. In the present invention, a thermoformed article having a total haze of preferably not more than 5%, and more preferably not more than 4%, and an inner haze of preferably not more than 3%, and more preferably not more than 2.5%, can impart more superior surface glossiness and deeper appearance to a laminated molding article. In addition, in a two-layered thermoformed article comprising a transparent layer and a printed or colored layer, a transparent layer having the above ranges of a total haze and an inner haze can impart more superior surface glossiness and deeper appearance of the print or color to the laminated molding article. See the paragraph bridging pages 7 and 8 of the present specification.

In contrast, none of the cited references discloses or suggests the advantages of the present invention set forth above.

In view of the foregoing, Applicants respectfully submit that the present invention is not obvious over the cited references and the rejection should be withdrawn.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,



Fang Liu
Registration No. 51,283

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: August 5, 2004